

CLAIMS

WE CLAIM:

1. A method for inhibiting expression of a polynucleotide sequence of hepatitis B virus in an *in vivo* mammalian cell comprising administering to
5 said cell a double-stranded RNA effector molecule comprising an at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10; wherein U is substituted for T.
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2. The method of claim 1, further comprising wherein effector molecules comprising an at least 19 contiguous base pair nucleotide sequence from within more than one of SEQ ID NO:1 through SEQ ID NO:10 are administered to the same cell.
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3. The method of claim 1, wherein said administering is accomplished by providing one or more expression vectors comprising an expression construct capable of enabling production in said mammalian cell of a double-stranded RNA effector molecule comprising an at least 19
20 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10; wherein U is substituted for T.
- 25 4. The method of claim 3, wherein said one or more expression vectors further comprise a promoter selected from T7 polymerase promoter, SP6 polymerase promoter, and RNA polymerase III promoter, said promoter operably linked to said at least 19 contiguous base pair nucleotide sequence.
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5. A method for inhibiting expression of a polynucleotide sequence of hepatitis C virus in an *in vivo* mammalian cell comprising administering to

said cell a double-stranded RNA effector molecule comprising an at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:11 and SEQ ID NO:12; wherein U is substituted for T.

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6. The method of claim 5, further comprising wherein effector molecules comprising an at least 19 contiguous base pair nucleotide sequence from within more than one of SEQ ID NO:11 and SEQ ID NO:12 are administered to the same cell.

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7. The method of claim 5, wherein said administering is accomplished by providing one or more expression vectors comprising an expression construct capable of enabling production in said mammalian cell of a double-stranded RNA effector molecule comprising an at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:11 and SEQ ID NO:12; wherein U is substituted for T.

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8. The method of claim 7, wherein said one or more expression vectors further comprise a promoter selected from T7 polymerase promoter, SP6 polymerase promoter, and RNA polymerase III promoter, said promoter operably linked to said at least 19 contiguous base pair nucleotide sequence.

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9. A method for inhibiting expression of both a polynucleotide sequence of hepatitis B virus and a polynucleotide sequence of hepatitis C virus in the same *in vivo* mammalian cell, comprising administering to said cell a double-stranded RNA effector molecule comprising a first at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10; wherein U is substituted for T;

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and a double-stranded RNA effector molecule comprising a second at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:11 and SEQ ID NO:12; wherein U is substituted for T.

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10. The method of claim 9, further comprising wherein effector molecules comprising an at least 19 contiguous base pair nucleotide sequence from within more than two of SEQ ID NO:1 through SEQ ID NO:12 are administered to the same cell.

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11. The method of claim 9, wherein said administering is accomplished by providing one or more expression vectors comprising an expression construct capable of enabling production in said mammalian cell of a double-stranded RNA effector molecule comprising a first at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10; wherein U is substituted for T; and a double-stranded RNA effector molecule comprising a second at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:11 and SEQ ID NO:12; wherein U is substituted for T.

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12. The method of claim 11, wherein said one or more expression vectors further comprise: a first promoter selected from T7 polymerase promoter, SP6 polymerase promoter, and RNA polymerase III promoter, said first promoter operably linked to said first at least 19 contiguous base pair nucleotide sequence; and a second promoter selected from T7 polymerase promoter, SP6 polymerase promoter, and RNA polymerase III promoter, said second promoter operably linked to said second at least 19 contiguous base pair nucleotide sequence.

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13. The method of any of preceding claims 1, 5, or 9 wherein the mammalian cell is a human cell.
14. A composition for inhibiting the expression of a polynucleotide
5 sequence of hepatitis B virus in an *in vivo* mammalian cell comprising a double-stranded RNA effector molecule comprising an at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ
10 ID NO:8, SEQ ID NO:9, and SEQ ID NO:10; wherein U is substituted for T.
15. The composition of claim 14, further comprising wherein effector molecules comprising an at least 19 contiguous base pair nucleotide sequence from within more than one of SEQ ID NO:1 through SEQ ID
15 NO:10 are present in the composition.
16. A composition for inhibiting the expression of a polynucleotide sequence of hepatitis C virus in an *in vivo* mammalian cell comprising a double-stranded RNA effector molecule comprising an at least 19
20 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:11 and SEQ ID NO:12; wherein U is substituted for T.
17. The composition of claim 16, further comprising wherein effector
25 molecules comprising an at least 19 contiguous base pair nucleotide sequence from within more than one of SEQ ID NO:11 and SEQ ID NO:12 are present in the composition.
18. A composition for inhibiting the expression of both a polynucleotide
30 sequence of hepatitis B virus and a polynucleotide sequence of hepatitis C virus in a single *in vivo* mammalian cell comprising a double-stranded RNA effector molecule comprising a first at least 19 contiguous base pair

- nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10; wherein U is substituted for T; and a double-stranded
5 RNA effector molecule comprising a second at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of SEQ ID NO:11 and SEQ ID NO:12; wherein U is substituted for T.
- 10 19. The composition of claim 18, further comprising wherein effector molecules comprising an at least 19 contiguous base pair nucleotide sequence from within more than two of SEQ ID NO: 1 through SEQ ID NO:12 are present in the composition.
- 15 20. The composition of any of claims 14, 16, or 18 wherein the mammalian cell is a human cell.
- 20 21. A composition for inhibiting the expression of a polynucleotide sequence of hepatitis B virus in a mammalian cell, comprising an at least 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of:
- a) SEQ ID NO:1;
 - b) SEQ ID NO:2;
 - c) SEQ ID NO:3;
 - 25 d) SEQ ID NO:4;
 - e) SEQ ID NO:5;
 - f) SEQ ID NO:6;
 - g) SEQ ID NO:7;
 - h) SEQ ID NO:8;
 - 30 i) SEQ ID NO:9;
 - j) SEQ ID NO:10;
 - k) the complement of (a) through (j); and

l) a mixture of (a) through (k).

22. A composition for inhibiting the expression of a polynucleotide sequence of hepatitis C virus in a mammalian cell, comprising an at least
5 19 contiguous base pair nucleotide sequence from within a sequence selected from the group consisting of:

- a) SEQ ID NO:11;
- b) SEQ ID NO:12;
- c) the complement of (a) or (b); and
- 10 d) a mixture of (a) through (c).

23. A composition for inhibiting the expression of a polynucleotide sequence of hepatitis B virus and a polynucleotide sequence of hepatitis C virus in the same mammalian cell, comprising an at least 19 contiguous
15 base pair nucleotide sequence from within a sequence selected from the group consisting of:

- a) SEQ ID NO:1;
- b) SEQ ID NO:2;
- c) SEQ ID NO:3;
- 20 d) SEQ ID NO:4;
- e) SEQ ID NO:5;
- f) SEQ ID NO:6;
- g) SEQ ID NO:7;
- h) SEQ ID NO:8;
- 25 i) SEQ ID NO:9;
- j) SEQ ID NO:10;
- k) SEQ ID NO:11;
- l) SEQ ID NO:12
- m) the complement of a sequence of (a) through (l); and
- 30 n) a mixture of (a) through (m);

wherein said composition comprises at least one from the group (a) through (j) and one from the group (k) and (l).

24. The composition of any of claims 21, 22, or 23 wherein said at least 19 contiguous nucleotide sequence comprises DNA and the mammalian cell is a human cell.
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25. The composition of any of claims 21, 22, or 23 wherein said at least 19 contiguous nucleotide sequence comprises RNA and the mammalian cell is a human cell; and further wherein U is substituted for T.
- 10 26. A polynucleotide sequence comprising a sequence selected from SEQ ID NO:14 through SEQ ID NO:26.
27. A polynucleotide sequence comprising nucleotides 1-19, 1-20, 1-21, 2-20, 2-21, or 3-21 of a sequence selected from SEQ ID NO:14 through
- 15 SEQ ID NO:26.
28. A polynucleotide sequence comprising an at least 19 contiguous base pair nucleotide sequence from within a sequence selected from SEQ ID NO:27 through SEQ ID NO:44.
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29. A composition for inhibiting the expression of a polynucleotide sequence of hepatitis C virus in a mammalian cell, comprising a double-stranded RNA effector molecule comprising an at least 19 contiguous base pair nucleotide sequence from within SEQ ID NO:27; wherein U is
- 25 substituted for T.
30. An expression construct comprising a composition of claims 14, 16, 18, 21, 22, 23, or 29.
- 30 31. A mammalian cell comprising an expression construct of claim 30.